BOOK REVIEW

Real and complex analysis. By Walter Rudin. McGraw-Hill, New York, 1966. xi+412 pp.

The book under review, *Real and complex analysis* by Walter Rudin, is excellent and without doubt represents a valuable contribution to the mathematical literature.

This book excels primarily in two important respects. The first is that the choice of topics serves as a superior introduction into much of what is current in analysis, in particular to the branches of harmonic analysis, partial differential equations, several complex variables, and Banach algebras. The second is that it blends both the concrete and abstract viewpoints and tends to do away with the notion that prevailed in the past separating analysis into "soft" analysis versus "hard" analysis.

The book on one hand establishes the Riesz representation theorem for locally compact Hausdorff spaces and on the other hand establishes the Denjoy-Carleman theorem for quasi-analytic functions, the former theorem being a good example of what was called "soft" and the latter of what was called "hard." It also contains a section entitled "An Abstract Approach to the Poisson Integral" (§5.22) which brings this point to the fore even more.

The book also has several other attributes which make it excellent. One of these is that for a number of nontrivial theorems the book is self-contained—needless to say, not a common occurrence.

For example, take the Denjoy-Carleman theorem mentioned above. To prove it, one needs the 2nd Paley-Wiener theorem, a discussion concerning entire functions, and the Plancherel theorem. All these pertinent facts can be found discussed previously in the text.

The book is replete with many other examples of this nature. A few illustrations are the following: the Beurling invariant subspace theorem, Mergelyan's theorem, and the Riesz L^p theorem for conjugate harmonic functions.

Another outstanding attribute of the book is that it is both well written and correctly written. During the academic year 1966–67, the reviewer used the book as the text for two different graduate courses at the University of California at Riverside. The errors and misprints that the reviewer found were remarkably few and far between.

One of the graduate courses taught was the typical one in real analysis given at the first year graduate level throughout the country. The other was a second year graduate course devoted to harmonic